

WHAT WE CLAIM IS:

1. A driving force transmitting apparatus comprising:
 - a main clutch (22) for transmitting driving force between a first
5 rotational member (12) and a second rotational member (15) disposed to be rotatable relative to each other;
 - a clutch mechanism (24) for bringing a pilot clutch (26) to a frictionally engaged condition; and
 - a cam mechanism (23) for bringing the main clutch (22) to a frictionally
10 engaged condition when the clutch mechanism (24) operates for bringing the pilot clutch (26) to the frictionally engaged condition, and the cam mechanism (23) including:
 - a pilot cam member (32);
 - a main cam member (31);
 - 15 a stopper member (33), the pilot cam member, the main cam member, and the stopper member being relatively rotatable, and
 - a biasing means (34) for biasing the stopper member (33) in a rotational direction for respectively engaging the pilot cam member (32) and the main cam member (31) to the stopper member (33),
 - 20 wherein a position of the pilot cam member (32), the main cam member (31), and the stopper member (33) in a rotational direction is determined depending on a relationship between a biasing force applied to the stopper member (33) by the biasing means (34) and a torque applied to the pilot cam member (32).
- 25 2. A driving force transmitting apparatus comprising:
 - a main clutch (22) for transmitting driving force between a first rotational member (12) and a second rotational member (15) disposed to be rotatable relative to each other;
 - 30 a clutch mechanism (24) for bringing a pilot clutch (26) to a frictionally engaged condition; and
 - a cam mechanism (23) for bringing the main clutch (22) to a frictionally engaged condition when the clutch mechanism (24) operates for bringing the pilot clutch (26) to the frictionally engaged condition, and the cam
35 mechanism (23) including:
 - a pilot cam member (32);

- a main cam member (31);
a stopper member (33), the pilot cam member, the main cam member, and the stopper member being relatively rotatable, and
a biasing means (34) for biasing the stopper member (33) in a rotational direction for respectively engaging the pilot cam member (32) and the main cam member (31) to the stopper member (33),
wherein the main clutch (22) is brought to a frictionally engaged condition by a thrust generated to the main cam member (31) substantially in parallel with a rotational axis of the second rotational member (15) during the operation of the clutch mechanism (24), the thrust is generated in response to a torque applied to the pilot cam member (32) via the frictionally engaged pilot clutch (26) in accordance with a relative rotation between the first rotational member and the second rotational member during the operation of the clutch mechanism (24), and the thrust is restrained from being generated to the main cam member (31) by a biasing force of the biasing means (24) applied to the stopper member (33) against a torque which can be applied to the pilot cam member (32) during the nonoperation of the clutch mechanism (24).
3. A driving force transmitting apparatus according to claim 1, wherein the stopper member (33) includes a restraining means (41, 42) for restraining a relative rotation of the main cam member (31) and the pilot cam member (32).
4. A driving force transmitting apparatus according to claim 2, wherein the stopper member (33) includes a restraining means (41, 42) for restraining a relative rotation of the main cam member (31) and the pilot cam member (32).
5. A driving force transmitting apparatus according to claim 3, wherein the restraining means (41, 42) is an engaging projection which engages with the main cam member (31) and the pilot cam member (32), and the biasing means biases the stopper member (33) in a direction for engaging the engaging projection of the stopper member (33) with the main cam member (31).

6. A driving force transmitting apparatus according to claim 4, wherein the restraining means (41, 42) is an engaging projection which engages with the main cam member (31) and the pilot cam member (32), and the biasing means biases the stopper member (33) in a direction for engaging the engaging projection of the stopper member (33) with the main cam member (31).
7. A driving force transmitting apparatus comprising:
- a main clutch (22) for transmitting driving force between a first rotational member (12) and a second rotational member (15) disposed to be rotatable relative to each other;
 - a clutch mechanism (24) for bringing a pilot clutch (26) to a frictionally engaged condition; and
 - a cam mechanism (23) for bringing the main clutch (22) to a frictionally engaged condition when the clutch mechanism (24) operates for bringing the pilot clutch (26) to the frictionally engaged condition, and the cam mechanism (23) including:
 - a pilot cam member (32);
 - a main cam member (31);
 - a stopper member (33), the pilot cam member, the main cam member, and the stopper member being relatively rotatable, and
 - a biasing means (34) for biasing the stopper member (33) in a rotational direction for respectively engaging the pilot cam member (32) and the main cam member (31) to the stopper member (33),
- wherein the main clutch is brought into a frictionally engaged condition by a thrust generated to the main cam member substantially in parallel with a rotational axis of the second rotational member, the thrust is generated in response to a torque transmitted to the pilot cam member via the pilot clutch in accordance with a relative rotation between the first rotational member and the second rotational member in a direction, and the thrust is restrained from being generated to the main cam member by a biasing force of the biasing means which restricts a relative rotation between the first rotational member and the second rotational member in the other direction.
8. A driving force transmitting apparatus according to claim 1, wherein the biasing means is a torsion spring, one end of the torsion spring is

attached to the main cam member, and the other end thereof is attached to the stopper member.

- 5 9. A driving force transmitting apparatus according to claim 2, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.
- 10 10. A driving force transmitting apparatus according to claim 3, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.
- 15 11. A driving force transmitting apparatus according to claim 4, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.
- 20 12. A driving force transmitting apparatus according to claim 5, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.
- 25 13. A driving force transmitting apparatus according to claim 6, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.
- 30 14. A driving force transmitting apparatus according to claim 7, wherein the biasing means is a torsion spring, one end of the torsion spring is attached to the main cam member, and the other end thereof is attached to the stopper member.